In the Claims:

Subf2

1. A method for counting particles, comprising the steps of:

successively passing multiple particles through a particle sensing zone;

introducing a first signal into said particle sensing zone for a period of time;

measuring a second signal emanating from said particle sensing zone, said second signal being caused by modulation of said first signal by said particles passing through said particle sensing zone;

generating raw data using said second signal, said raw data correlating to a raw count of particles passing through said chamber, a wait time count and a size of each particle; and

processing said raw data by using a true average flight time and a true average wait time to obtain a corrected count of particles.

Subf1

2. The method of claim 1, wherein said particles are biological particles.

3. The method of claim 1, wherein said particles are blood cells.

4. The method of claim 1, wherein said particles comprise white blood cells.

Subf3

5. The method of claim 1, wherein a sample containing multiple particles of sizes varying by more than 50% is passed through said measuring chamber.

Subf1

6. The method of claim 5, wherein said sample has a particle concentration so high that the average time between particles is less than the flight time.

7. The method of claim 1, wherein said particle sample is one which is expected to have a particle density variability of greater than 50 fold between various different samples.

8. The method of claim 1, wherein the true average flight time corresponds to a true average flight time that said second signal is above a threshold.

9. The method of claim 1, wherein the true average wait time corresponds to a true average time that particles are absent from the sensing zone.

10. The method of claim 1, further comprising using an average period correction method calculation and an enhanced coincidence correction calculation to correct raw data to account for particle size variability in said sample.

11. An apparatus for counting particles in a sample, comprising:

one or more particle sensors, each sensor having a sensing zone;

a particle delivery unit for delivering particles to at least one of said particle sensing zones, said particles passing through at least one sensing zone;

a particle measuring unit for determining the size of particles passing through at least one of said particle sensing zones, said sensor generating a particle size signal, and for determining the number of particles that pass through at least one of said particle sensing zones in a given period of time, said particle sensor generating a particle number signal;

a device for calculating the average flight time of said particles in said sample based on said particle size signal and said particle number signal; and

a correcting unit for correcting an apparent particle count to an adjusted particle count by adding a true average flight time to a true average wait time to obtain a corrected count of particles.

12. An apparatus for counting particles, comprising:

a chamber having an inlet, an outlet and a particle sensing zone located between said inlet and said outlet;

a pump for passing a fluid containing particles into said inlet, through said particle sensing zone and out of said outlet;

an electric source arranged to pass an electric current through said particle sensing zone;

an electric current detector for measuring electric current as particles pass through said particle sensing zone, said detector generating raw data indicative of the number of

particles passing through said particle sensing zone and indicative of the size of particles passing through said particle sensing zone; and

a program for processing raw data from said detector, said program having the capability add true average flight time to average wait time to give a true average period value.

13. The apparatus of claim 12, wherein said program uses an average period correction method calculation and an enhanced coincidence correction calculation to correct raw data obtained from said detector to account for particle size variability in said sample.

14. A method for counting particles, comprising the steps of:

successively passing multiple particles through a particle sensing zone;

introducing a first signal into said particle sensing zone for a period of time;

measuring a second signal emanating from said particle sensing zone, said second signal being caused by modulation of said first signal by said particles passing through said particle sensing zone;

generating raw data using said second signal, said raw data correlating to a raw count of particles passing through said chamber, a wait time count and a size of each particle; and

performing coincidence correction by processing said raw data by using a true average flight time.